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(71) Applicant (for all designated States except US): EPIGENOMICS AG [DE/DE]; Kastanienallee 24, 10435 Berlin (DE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): BERLIN, Kurt [DE/DE]; Marienkäferweg 4, 14532 Stahnsdorf (DE).

(74) Agent: SCHUBERT, Klemens; Neue Promenade 5, 10178 Berlin (DE).

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(54) Title: METHOD FOR THE DETECTION OF CYTOSINE METHYLATION PATTERNS WITH HIGH SENSITIVITY

(57) Abstract: The present invention concerns a method for the detection of cytosine methylation in DNA samples, in which the following steps are conducted: a genomic DNA sample which comprises target DNA and background DNA is chemically treated such that all unmethylated cytosine bases are converted to uracil, while the 5-methylcytosine bases remain unchanged; the chemically treated DNA sample is amplified with the use of at least 2 primer oligonucleotides as well as a polymerase and a nucleotide mixture, the composition of which leads to a preference for the target DNA over the background DNA as the template; and the methylation state in the target DNA is concluded from the presence of an amplificate or its quantity.

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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, PAJ, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 265 171 B1 (HERMAN JAMES G ET AL) 24 July 2001 (2001-07-24)	1,11,12, 14,21, 22,30, 37-40
Y	the whole document	2-10,13, 15-20, 23-29, 31-36
X	WO 01/44504 A (FOX JAYNE CATHERINE ; HAQUE KEMAL (GB); LITTLE STEPHEN (GB); ASTRAZENE) 21 June 2001 (2001-06-21)	1,11,12, 14,21, 22,30, 37-40
Y	the whole document	2-10,13, 15-20, 23-29, 31-36
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Botz, J

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>YU ET AL: "SPECIFIC INHIBITION OF PCR BY NON-EXTENDABLE OLIGONUCLEOTIDES USING A 5' TO 3' EXONUCLEASE-DEFICIENT DNA POLYMERASE"</p> <p>BIOTECHNIQUES, EATON PUBLISHING, NATICK, US,</p> <p>vol. 23, no. 4, October 1997 (1997-10), pages 714,716-720, XP001041499</p> <p>ISSN: 0736-6205</p> <p>the whole document</p>	19,20
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A	<p>AUER T ET AL: "SELECTIVE AMPLIFICATION OF RNA UTILIZING THE NUCLEOTIDE ANALOG DITPAND THERMUS THERMOPHILUS DNA POLYMERASE"</p> <p>NUCLEIC ACIDS RESEARCH, OXFORD UNIVERSITY PRESS, SURREY, GB,</p> <p>vol. 24, no. 24, 1996, pages 5021-5025, XP002916438</p> <p>ISSN: 0305-1048</p> <p>the whole document</p>	2-9

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International application No.

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

☒

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☒

in written format

☒

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed

☐

filed together with the international application in computer readable form

☒

furnished subsequently to this Authority for the purpose of search

2. ☒

In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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